Offsets in Defense Trade

Prepared By
The U.S. Department of Commerce

The study in its entirety can be found at: http://www.bxa.doc.gov. [The original numbering of the tables, charts and figures are the same as in the original *Offsets in Defense Trade Report*.]

Executive Summary

This is the sixth report on offsets in defense trade prepared pursuant to Section 309 of the *Defense Production Act of 1950*,[1] as amended. The Office of Strategic Industries and Economic Security within the U.S. Department of Commerce, Bureau of Industry and Security (BIS) has been delegated responsibility to prepare the reports required under Section 309.[2] In order to assess the impact of offsets in defense trade, the Department of Commerce obtained data from U.S. firms involved in defense offsets.

This report covers offset agreements and transactions entered into from 1993 through 1999. In addition, the report:

- Discusses the changes in the industrial base during the reporting period as a result of consolidations and mergers in the defense industry;
- Reports on ongoing U.S. government interagency activity and discussions with foreign government officials on offsets;
- Presents summaries of offset agreements and transactions for the reporting period; and
- Highlights other country practices utilizing offsets.

Summary of Findings

Total offset activity can be measured by the number and value of new offset agreements entered into between U.S. defense contractors and foreign governments, and the number and value of individual transactions related to the agreements that are carried out during the reporting period.

Offset Agreements, 1999

In 1999, U.S. defense contractors reported entering into thirty-two new offset agreements with ten different countries. The total value of new offset agreements was $1.45 billion, representing 72 percent of the total value of related U.S. defense export contracts ($2.01 billion). Both the total value of defense exports and the total value of the offset agreements were at their lowest levels in 1999, compared to the rest of the reporting period (1993-1999).

Offset Agreements, 1993-1999

For the period 1993-1999, U.S. defense companies reported entering into 307 offset agreements with thirty-four countries. The companies identified 198 different weapon systems or subsystems with an export contract value of $40.2 billion; related offset agreements were $22.3 billion (55 percent of the export contract value). Sales of aerospace weapon systems made up nearly 90 percent of the dollar value of the reported defense export contracts ($35.9 billion).

1 Codified at 50 U.S.C. app. Section 2099 (1994 and Supp. V, 1999).

2 On April 18, 2002, the name of the Bureau of Export Administration was changed to the Bureau of Industry and Security.

The dollar values of both export contracts and offset agreements varied annually, as did the associated offset percentages. Although the data show a general drop in overall U.S. export contracts and related offset agreements from 1997 to 1999, the value of the offset agreements as a percent of the reported defense export contract value continues to increase.

Europe continues to be the major destination for U.S. defense exports. Although Europe accounted for 42 percent of total U.S. defense export contracts, new offset agreements with Europe accounted for two-thirds of all new agreements. The rest of the world (non-European countries) accounted for one-third of the offset agreements but 58 percent of the export contracts. Asia accounted for 18 percent of the value of new agreements, the Middle East 14 percent, and the Western Hemisphere just 2 percent.

While the non-European nations had higher export contract totals, Europe had a much greater offset impact because of the higher offset percentages required.

Likewise, in 1999, European nations received higher offset percentages per export contract. In Europe, offsets were equal to an average of 100 percent of the value of the export. In non-European nations, the average value of the new offset agreements was 64 percent of the total contract value.

Offset Transactions, 1999

In 1999, U.S. companies reported offset transactions with a total actual value of $1.81 billion, down 21 percent from the total in 1998 of $2.28 billion and lower than the transaction value for any of the previous six years. This decline is consistent with the drop in defense sales and the number of offset agreements.

Offset Transactions, 1993-1999

During the reporting period, companies cited 3,869 offset transactions executed in thirty-three countries. These transactions were linked to 238 weapon systems under various existing offset agreements. The total value of these transactions was $15.9 billion.

Conclusions

U.S. defense exports were negatively affected by both the retrenchment of global military expenditures and the increased enforcement of strict foreign offset policies. At the same time, offsets have become an increasingly important factor in determining contract awards, and thus have a direct bearing on U.S. defense contractors' access to foreign markets. Offset agreements in excess of 100 percent of the contract value are occurring with increasing frequency, and in some cases have exceeded 300 percent. From the U.S. perspective, Europe is clearly the central focus of this trend, dominating offset agreements and transactions with U.S. companies. Because 90 percent of offset agreements are aerospace-related, concerns about the continued economic stability of U.S. prime contractors and the aerospace infrastructure have increased.

Bureau of Industry and Security calculates that export sales facilitated by offsets maintained 38,400 work-years annually between 1993 and 1999, while the offset transactions displaced about 9,500 work-years annually.

In the coming year, using authorities granted under the *Defense Production Act of 1950*, as Amended, the Department of Commerce is committed to work with U.S. industry, the Department of Defense, and foreign governments to analyze the impact of offsets on all parties and to seek ways to mitigate the effect of offsets on competition, thus ensuring a robust and vibrant U.S. defense industrial base.

Background

The Global Defense Environment

Although the United States Government views offsets as an economically inefficient way to conduct trade, offsets remain a policy choice of foreign governments and, therefore, a reality in

the international defense market to which U.S. defense firms must respond. Under these circumstances, U.S. policy makers should take into account the current state of the global defense industry before proposing changes in offset policy and other regulations.

The U.S. defense industry has changed significantly since the end of the Cold War. Globalization of the defense industry and the increased reliance on commercial technology have fundamentally changed the traditional relationships between foreign customers, U.S. suppliers, and the U.S. Department of Defense (DoD). This change in the global defense market coupled with the reduction in DoD's procurement budget challenges U.S. defense firms to expand market share more aggressively worldwide, while attempting to maintain their technological edge.

The end of the Cold War expanded comparative advantages for the United States in defense exports. The collapse of the Soviet Union significantly reduced its ability to export weapon systems in the early 1990s. In addition, European allies reduced investments in the defense sector, especially after the Gulf War.

Although procurement and defense-related research and development expenditures decreased in the 1990s, U.S. defense expenditures still greatly exceed those of its North Atlantic Treaty Organization (NATO) allies. This imbalance has led to a widening defense technology gap, as demonstrated in the 1999 coalition action against Serbia. Armed with more advanced defense technology, the U.S. share of the international arms market has grown to approximately 55-60 percent, even though the global defense export market has shrunk significantly (by as much as 50 percent, according to some estimates).

In addition to the technology gap and the diminished competition from the former Soviet Union, the consolidation of U.S. defense firms contributed to the increase in U.S. market share during the reporting period. The merger of Boeing and McDonnell-Douglas and the acquisitions made by Lockheed Martin and Raytheon created fewer large U.S. defense companies, offering a wide array of defense equipment and services. The fragmented European defense industry was not able to compete effectively against these U.S. mega-firms and initiated its own version of industry consolidation. Two large European firms emerged, British Aerospace (BAE) Systems and the European Aeronautic Defence and Space Company (EADS), to provide an alternative to U.S. defense products. This recent industry consolidation and rationalization in Europe led to increased competition for U.S. defense firms in the new defense market.

Another effect of globalization has been the virtually universal access to commercial technology, and its potential use for both civil and military applications. Many of the most critical technologies (e.g. space, surveillance, sensors and signal processing, simulation, and telecommunications) now are equally available to the United States and its allies.

Although U.S. defense firms have maintained a large share of the defense export market worldwide, increased European support has resulted in much stronger competition from European defense manufacturers. Purchasing nations now have many equipment choices from both European and U.S. sources. Therefore, the decisions of purchasing governments are influenced increasingly by factors unrelated to price, quality, and delivery time. The ability of competing companies to provide industrial benefits or offset packages is one of the most important selection criteria for the purchase of new weapon systems.

Within this new environment of mega-defense suppliers chasing fewer customers, offset packages play a more critical role in global defense procurement competitions. The majority of large arms sales won by U.S. industry since the early 1990s have included comprehensive offsets or "industrial benefits" packages. A sample of the major U.S. arms sales is shown in Table 1-1.

Table 1-1 Major U.S. Arms Sales, 1993-2001

Year	Equipment	Customer Country	Dollar Value
1993	F/A-18 Aircraft	Switzerland	$2 billion
1995	AH-64 Apache Helicopter	Netherlands	$1 billion
1995	AH-64 Apache Helicopter	United Kingdom	$2 billion
1996	Airborne Reconnaissance System	Korea	$400 million
1996	Light Armored Vehicles (APC)	Kuwait	$325 million
1996	Replacement Maritime Patrol Aircraft	United Kingdom	$1.8 billion
1997	F-100 Frigate (AEGIS System, SPY-1D Radar)	Spain	$740 million
1997	ANZAC Helicopter Program (SH-2G)	Australia/ New Zealand	$340 million
1998	Patriot Missile System	Greece	$610 million
1999	F-16 Aircraft	Greece	$2 billion
1999	AH-64 Apache Helicopter	Singapore	$1.7 billion
2000	F-16 Aircraft	Chile	$600 million
2000	F-16 Aircraft	U.A.E.	$7 billion
2000	Norwegian Frigate Program (AEGIS System, SPY-1D Radar)	Norway	$800 million
2001	767 Tanker Aircraft	Italy	$600 million

Source: Industry Press Releases

Many European defense firms receive support from their national governments, including financing for defense exports. U.S. defense firms generally do not receive financing support. However, a major advantage for U.S. defense firms in the worldwide defense market is the broad range of technology (both direct and indirect) and other business opportunities that can be transferred through offset programs. U.S. technology in defense, and more importantly in related fields such as information technology, is extremely attractive to customer nations, both in advanced and newly industrializing economies.

Offset programs have become one of the few distinguishing characteristics between U.S. and European defense products. Higher levels of U.S. investment (in both the public and private sector) in defense and commercial research and development throughout the last decade have resulted in the development of technologies in aerospace and other critical sectors that are very attractive to purchasing nations. These nations use offsets as a means of gaining access to U.S. expertise and markets. In this way, offsets have become an important factor in the success of U.S. defense firms in the global defense market, but at a price to the subcontractor base and non-related industries.

In summary, the transformation of the global defense market in the last ten years has established new relationships between U.S. defense firms, the U.S. Department of Defense, and U.S. allies. U.S. industry responded quickly to the new terms of trade structured by this rapid globalization by consolidating into several large firms that have successfully expanded their market share. The ongoing consolidation in Europe and the increased national government support of European firms, however, have resulted in greater competition for defense export from European firms worldwide.

In this context of a globalized defense industry and market, offsets are a competitive tool vital to success.[3] A primary challenge for the U.S. Government and the U.S. defense industry is to find a solution that will reduce the negative effects of offsets associated with defense purchases while maintaining and/or enhancing U.S. competitiveness in this critical industry sector.

Legislation and Regulations

In 1984, Congress enacted amendments to the *Defense Production Act of 1950*, as amended (DPA), which included the addition of *Section 309* addressing offsets in defense trade.[4] *Section 309* of the *Defense Production Act of 1950* requires the President to submit an annual report on the impact of offsets on the United States to the Congress's then-Committee on Banking, Finance, and Urban Affairs of the House of Representatives and the Committee on Banking, Housing, and Urban Affairs of the Senate.

Initially, the Office of Management and Budget coordinated the interagency process of preparing the report for the Congress. Other agencies involved in the process included the Department of Commerce, Department of Defense, Department of Labor, Department of State, and Department of Treasury, and the Office of the United States Trade Representative. In 1992, *Section 309* of the *Defense Production Act of 1950* was amended, and the Secretary of Commerce was given the responsibility of preparing the report for the Congress, on the President's behalf.[5]

Under Section 309, the Secretary of Commerce is authorized to develop and administer the regulations necessary to collect offset data from the U.S. defense industry. The Secretary of Commerce delegated this authority to the Bureau of Industry and Security (BIS), which published its first offset regulations in the *Federal Register* in 1994. See Appendix B for a copy of the regulations as published.[6]

The 1992 amendments to *Section 309* of the DPA made other changes to the offset data collection process. The amendments lowered the offset agreement reporting threshold from $50 million to $5 million for U.S. firms entering into foreign defense sales contracts subject to offset agreements. Firms report all offset transactions for which they receive offset credits of $250,000 or more. Every June, companies report offset agreement and transaction data for the previous calendar year to BIS. The data elements collected each year from industry are listed in Section 701.4 of the Department's offset regulations and are shown in Appendix B.

Official U.S. Government Policy

The official U.S. government policy on offsets in defense trade was developed by an interagency offset team and issued by the President in 1990. In 1992, this policy was set into law as follows:[7]

- In General. Recognizing that certain offsets for military exports are economically inefficient and market distorting, and mindful of the need to minimize the adverse effects of offsets in military exports while ensuring that the ability of United States firms to compete for military export sales is not undermined, it is the policy of the Congress that-

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3 Generally, offsets are not permitted under the Agreement on World Procurement of the World Trade Organization (WTO). However, defense procurement is not covered under the agreement. For more information, see the World Trade Organization website: http://www.wto.org/english/tratop_e/gproc_e/over_e.htm.

4 See Pub. L. 98-265, Apr. 17, 1984, 98 Stat. 149.

5 See Pub. L. 102-558, Oct. 28, 1992, 106 Stat. 4198; see also Section 4 of Exec. Order No. 12919, 59 Fed. Reg. 29525 (June 3, 1994).

6 See 59 Fed.Reg. 61796 (Dec. 2, 1994), codified at 15 C.F.R. §701.

7 Congress incorporated this policy statement into law with the *Defense Production Act Amendments of 1992* (Pub. L. 102-558, Title I, Part C, §123, 106 Stat. 4198).

(1) No agency of the U.S. government shall encourage, enter directly into, or commit United States firms to any offset arrangement in connection with the sale of defense goods or services to foreign governments;

(2) U.S. government funds shall not be used to finance offsets in security assistance transactions, except in accordance with policies and procedures that were in existence on March 1, 1992;

(3) Nothing in this section shall prevent agencies of the U.S. government from fulfilling obligations incurred through international agreements entered into before March 1, 1992; and

(4) The decision whether to engage in offsets, and the responsibility for negotiating and implementing offset arrangements, reside with the companies involved.

- Presidential Approval of Exceptions. It is the policy of the Congress that the President may approve an exception to the policy stated in subsection (a) after receiving the recommendation of the National Security Council.

- Consultation. It is the policy of the Congress that the President shall designate the Secretary of Defense to lead, in coordination with the Secretary of State, an interagency team to consult with foreign nations on limiting the adverse effects of offsets in defense procurement. The President shall transmit an annual report on the results of these consultations to the Congress as part of the report required under *Section 309(a)* of the *Defense Production Act of 1950*.

Offset Terminology

There are several basic terms used in discussions of offsets in defense trade. For more definitions and an illustrative example of an offset arrangement, please see the Glossary in Appendix F.

Offsets

Compensation practices required as a condition of purchase in either government-to-government or commercial sales of "defense articles" and/or "defense services" as defined by the *Arms Export Control Act* (22 U.S.C. § 2751, et seq.) and the *International Traffic in Arms Regulations* (22 C.F.R. §§ 120-130).

Direct Offsets

Contractual arrangements that involve defense articles and services referenced in the sales agreement for military exports. These transactions are directly related to the defense items or services exported by the defense firm and are usually in the form of co-production, subcontracting, technology transfer, training, production, licensed production, or financing activities.

Indirect Offsets

Contractual arrangements that involve goods and services unrelated to the exports referenced in the sales agreement. These transactions are not directly related to the defense items or services exported by the defense firm. The kinds of offsets that are considered "indirect" include purchases, investment, training, financing activities, marketing/exporting assistance, and technology transfer.

Co-production

Overseas production based upon government-to-government agreement that permits a foreign government or producer(s) to acquire the technical information to manufacture all or part of a U.S. origin defense article. Co-production includes government-to-government licensed production, but excludes licensed production based upon direct commercial arrangements with U.S. manufacturers.

Licensed Production

Overseas production of a U.S. origin defense article based upon transfer of technical information under direct commercial arrangements between a U.S. manufacturer and a foreign government or producer.

Subcontractor Production

Overseas production of a part or component of a U.S. origin defense article. The subcontract does not necessarily involve license of technical information and is usually a direct commercial arrangement between the defense prime contractor and a foreign producer.

Overseas Investment

Investment arising from an offset agreement, often taking the form of capital dedicated to establish or expand a subsidiary or joint venture in the foreign country.

Technology Transfer

Transfer of technology that occurs as a result of an offset agreement and that may take the form of research and development conducted abroad, technical assistance provided to the subsidiary or joint venture of overseas investment, or other activities under direct commercial arrangement between the defense prime contractor and a foreign entity.

Countertrade

In addition to the types of offsets defined above, various types of commercial countertrade arrangements may be required. A contract may include one or more of the following mechanisms:

- Barter - A one-time transaction only, bound under a single contract that specifies the exchange of selected goods or services for another of equivalent value.

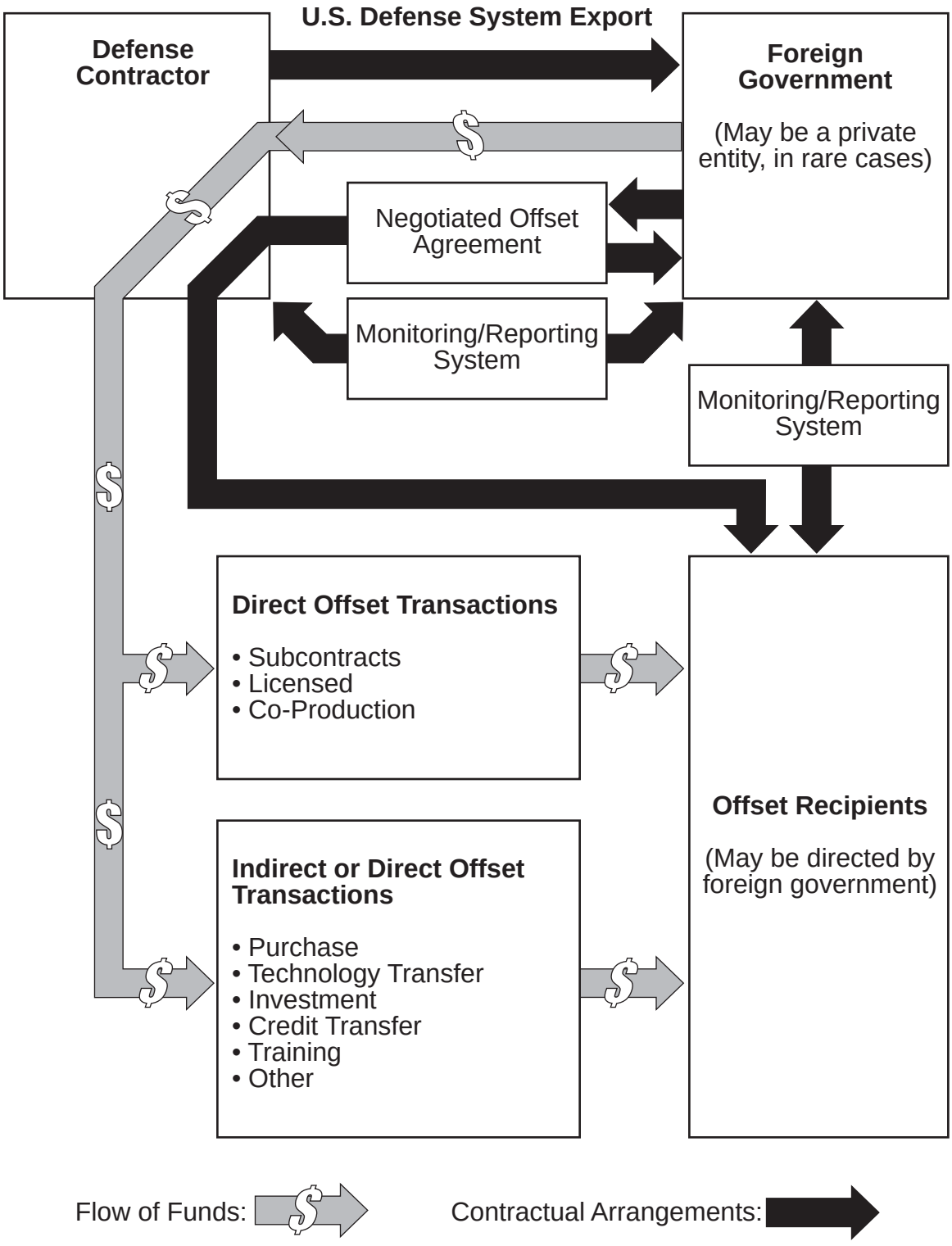
- Counterpurchase - An agreement by the initial exporter to buy (or to find a buyer for) a specific value of goods (often states as a percentage of the value of the original export) from the original importer during a specified time period.

- Compensation (or Buy-Back) - An agreement by the original exporter to accept as full or partial repayment products derived from the original exported product.

Offsets Illustration

Figure 1 shows the contractual relationships and money flows that often are involved in a typical export contract and accompanying offset agreement. The foreign government transfers funds to the defense contractor as payment for the defense article. The defense contractor recovers expenditures associated with direct offset transactions through foreign government payments for the sale. For indirect offsets, the contractors are reimbursed only for administrative costs by the purchasing government; they recover any other costs through resale of or marketing assistance for products manufactured in the purchasing country, by returns on their investments, or by other market mechanisms. Indirect offsets also may be related to the production of defense items other than the defense articles sold. Whether direct or indirect, offset transactions return funds to the purchasing country. The offset funds spent in the foreign country to fulfill offsets are, therefore, a means by which the foreign government redirects public expenditures back into its own country.

Figure 1 Offsets Illustration



Viewed in this manner, foreign governments support local industry through the use of offsets. Foreign governments may use offset transactions to maintain industries that might otherwise fail or to enhance the technology, promote investment, provide markets, and stimulate employment in various sectors in its home country.

Countries and Regions

For ease of analysis, and in some cases to protect company confidentiality, countries actively requiring offsets in defense trade during the 1993-1999 period were divided into the following four geographic regions:

- Europe
- The Middle East
- North and South America
- Asia

The countries found in each region are shown in Table 1-2 found on the next page.

Outline of Report

This sixth report on offsets in defense trade to the Congress was prepared by the Department of Commerce in consultation with the Departments of Defense, Labor, and State, the Office of the U.S. Trade Representative, and the Central Intelligence Agency. The report begins with an overview of the data collected from U.S. industry for 1993 through 1999, followed by an assessment of offsets on the U.S. defense industrial base and a discussion of new offset agreements and transactions for 1999. Next, the report presents detailed sections on offset agreements and offset transactions for 1993-1999, followed by an industry-level analysis of offset transaction data. The report includes a section focusing on the aerospace industry and the impact that offsets have had on the competitiveness of U.S. aerospace firms in the global market. The report ends with an analysis of the offset preferences for the five countries requiring the largest offsets during the seven-year period.

The appendices to the report include:

- Discussion of the actions to date of the Presidential Commission on Offsets in International Trade;
- Glossary of offset terms and an illustrative example;
- Information collection regulations promulgated by the Department of Commerce in connection with offsets;
- Summaries of offset laws and regulations for twenty-five specific nations.

Statistical Overview

The Office of Strategic Industries and Economic Security has received data on offsets from U.S. firms covering the years 1993-1999. The data submitted includes the values of U.S. export contracts and the offset agreements entered into as conditions of acquiring those export contracts, as well as offset transactions executed in fulfillment of previously reported offset agreements. Some of the offset transactions reported referenced offset agreements entered into before 1993 (when the Department of Commerce first initiated reporting requirements).

Table 1-2 Purchasing Countries and Groups Requiring Offset Agreements, by Region

Europe
Austria
Belgium
Czech Republic
Denmark
The European Participating Group (EPG) (Belgium, The Netherlands, Norway)
Finland
France
Germany
Greece
Italy
Luxembourg
NATO
Netherlands
Norway
Portugal
Slovenia
Spain
Sweden
Switzerland
United Kingdom

Middle East
Israel
Kuwait
Saudi Arabia
Turkey
United Arab Emirates

North and South America
Brazil
Canada

Asia
Australia
China
Indonesia
Malaysia
New Zealand
Singapore
South Korea
Taiwan
Thailand

Source: U.S. Department of Commerce/BIS Offsets Database

Offsets Summary Data

During 1993-1999, a total of 39 U.S. defense companies reported entering into 307 offset agreements with 34 countries. The companies identified 198 different defense systems or subsystems with an export contract value of $40.2 billion, and related offset agreements of $22.3 billion. Sales of aerospace weapon systems made up nearly 90 percent of the export contracts' value ($35.9 billion). The related offset agreements averaged 55 percent of the export contract value and the average term of the offset agreements was 85 months with respect to offset transactions, companies reported 3,869 offset transactions executed in 36 countries. The transactions were linked to 238 defense systems under various existing offset agreements, some of which were entered into before 1993. The value of the offset transactions from 1993-1999 was $15.9 billion. U.S. companies received $18.2 billion in offset credits for their efforts, which was equal to 118.9 percent of the actual value.[8] Table 2-1 provides an overview of the offsets database.

Overview of New Offset Agreements, 1993-1999

On an annual basis from 1993-1999, the dollar values of both export contracts and offset agreements varied greatly, as did the associated offset percentages. The value of the offset agreements as a percentage of the value of the export contracts ranged from 34 to 82 percent. Behind this variance were major individual contracts that affected the data totals, and a wide variation in the countries entering into agreements in any given year – each with unique offset policies and requirements. In general, countries with more advanced economies demand greater levels of offsets than developing countries. Chart 2-1 shows these seven-year values and their volatile nature.

Based on the data from 1993-1999, an apparent trend is the general drop in reported defense exports and related offset agreements, and the rise in the value of the offsets as a percent of the value of the export contract. This is shown on Chart 2-2. The value of U.S. export contracts shows an especially sharp decline from 1993-1999, while the value of related offset agreements show a more moderate decline over the same time period. The steepness of the down trend in export contracts is greatly influenced by two major contracts negotiated in 1993, one with Taiwan and the other with Saudi Arabia, which together totaled nearly $10 billion. This was accompanied by low percentage offset agreements. If the 1993 export contract data were not considered, the decline in the offsets percentage would be much more moderate. Also, defense spending in Europe, traditionally the largest market for the United States, dropped sharply in the last decade, which has led to less purchasing of U.S. defense systems.

Overview of Offset Transactions, 1993-1999

Offset transactions applied to outstanding offset agreements totaled $15.9 billion during the seven-year period from 1993 to 1999. Direct offset transactions were valued at $6.4 billion and represented 40 percent of total offset transactions. U.S. companies reported receiving $7.4 billion in offset credits for the direct transactions, which translates into 116 percent of the actual value of the offset transactions. Direct offset transactions, as a share of total transactions, ranged from 32 percent in 1993 and 1994, to a high of 62 percent in 1998.

As shown in Chart 2-3, no significant trend in direct transactions is discernable. The high percentage share of direct offset transactions in 1998 is a result of unusually high direct offset totals for Italy, the United Kingdom, Israel and the Netherlands. Italy had the largest value of direct transactions and had no indirect or unspecified types.

8 The "credit value" is an incentive that some foreign governments provide for certain kinds of offset transactions. This value varies greatly by country and by the kind of offset transaction (i.e., purchase, technology transfer, investment, etc.), but is normally more than the actual value. The percentage difference between the actual value and the credit value is the multiplier. For the entire database, the multiplier is 118.6 percent, which means the credit value is 18.6 percent more than the actual value. Generally, multipliers are provided only by developing countries.

Table 2-1 Salient Offset Totals, 1993-1999
New Offset Agreements

Year	Countries Companies Reporting	Number of Making Agreements	New Offset Agreements	Export Systems	Values in $ Billions Export Contracts Value	Values in $ Billions Offset Agreements Value	Percent Offsets	Average Term of Agreement (In Months)
1993	18	17	29	28	$13.95	$4.79	34.4%	87
1994	18	20	49	43	$4.79	$2.05	42.8%	79
1995	19	18	45	34	$7.40	$6.03	81.5%	93
1996	15	19	50	34	$2.99	$2.27	76.0%	94
1997	13	19	58	49	$5.84	$3.85	65.8%	79
1998	11	17	44	35	$3.26	$1.85	56.7%	83
1999	9	10	32	24	$2.01	$1.45	72.3%	75
Totals	***39**	***34**	**307**	**247**	**$40.24**	**$22.29**	**61.35%**	**84.28**

Offset Transactions

Year	Companies Reporting	Number of Countries Involved	Offset Transactions	Export Systems	Values, in $ Billions Actual Value	Values, in $ Billions Credit Value	Percent Credit
1993	23	27	439	63	$1.81	$2.16	118.7%
1994	21	26	550	61	$1.89	$2.16	114.3%
1995	20	26	667	76	$2.66	$3.33	125.3%
1996	21	26	621	81	$2.70	$3.07	113.6%
1997	18	26	576	67	$2.71	$3.26	120.3%
1998	19	30	579	79	$2.28	$2.60	114.0%
1999	12	24	437	60	$1.81	$2.24	124.0%
Totals	***41**	***36**	**3869**	**487**	**$15.86**	**$18.82**	**118.6%**

Source: U.S. Department of Commerce/BIS Offsets Database

*These figures represent the total number of different companies and different countries reported over the period.

Chart 2-1 Export Contracts and Offset Agreements, 1993-1999

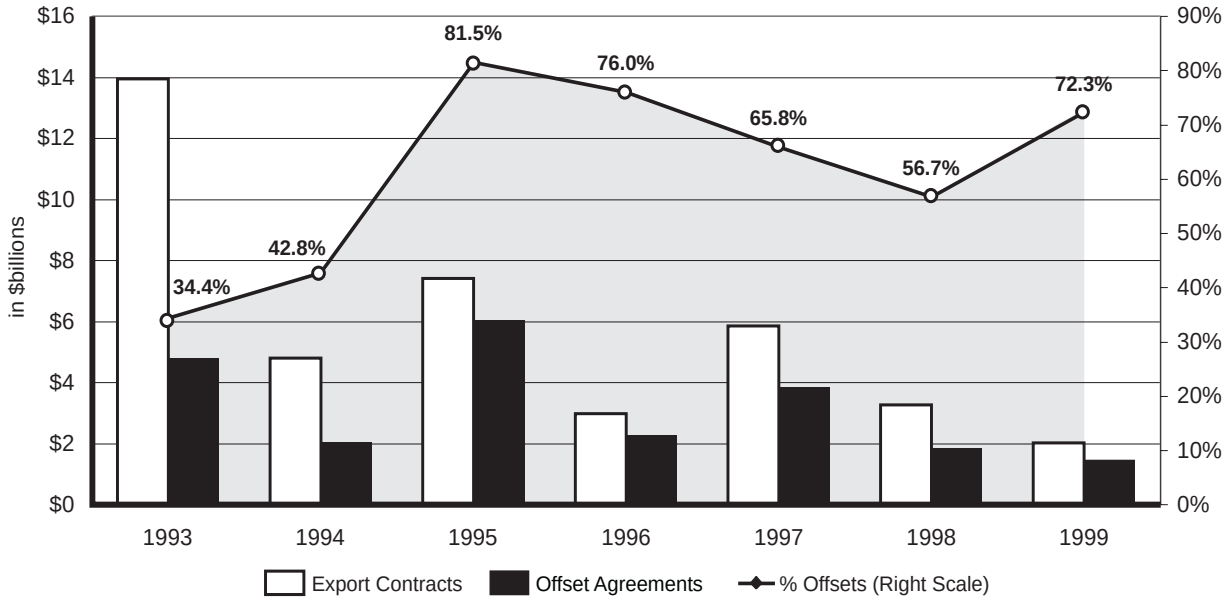


Chart 2-2 Linear Trendlines of Offset Activity, 1993-1999

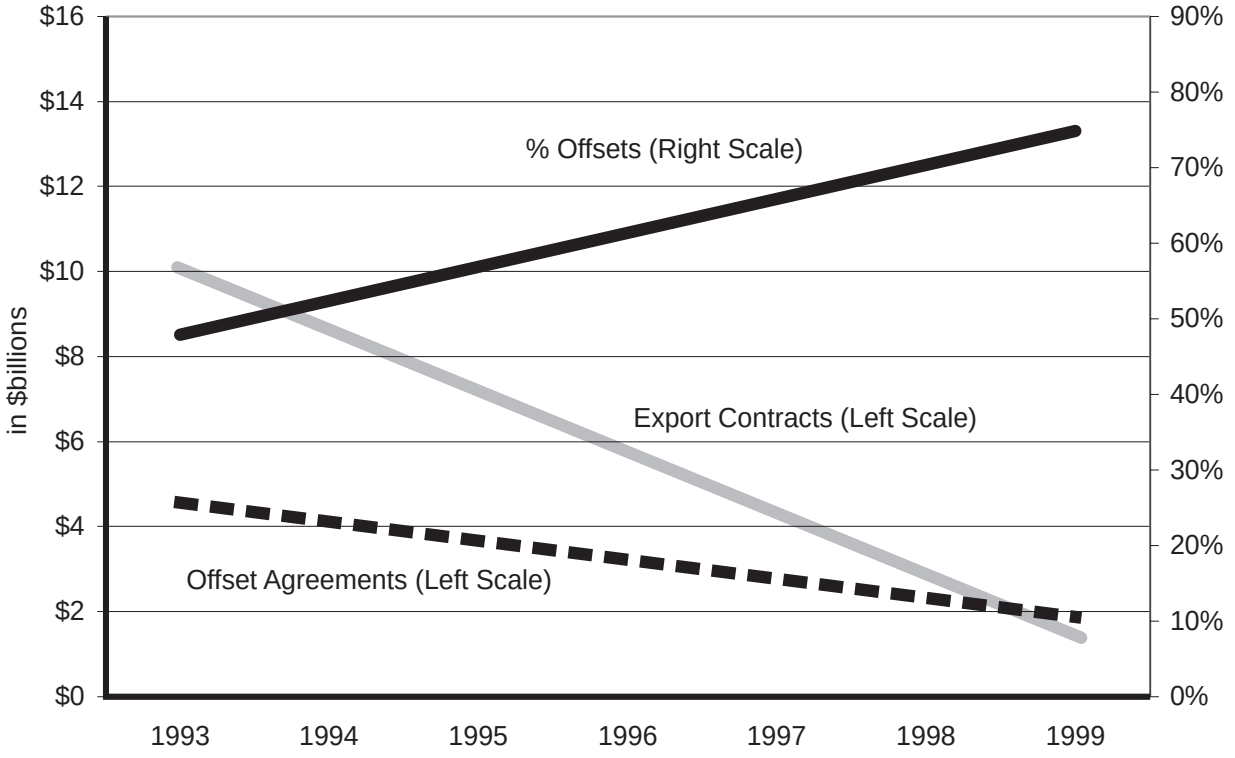
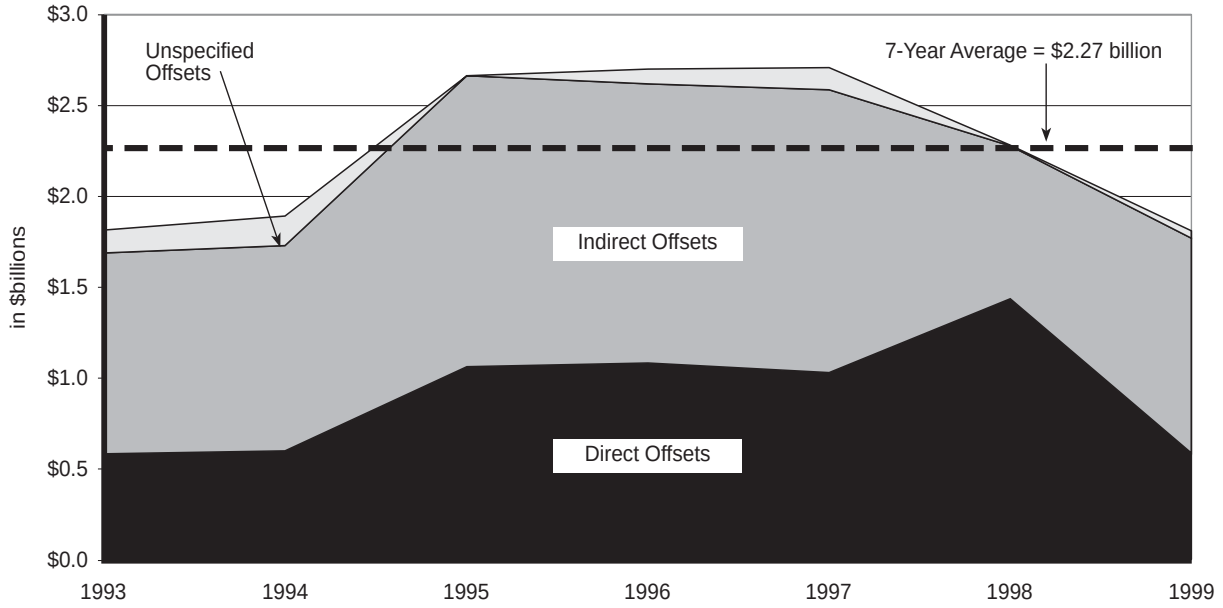


Chart 2-3 Offset Transactions, 1993-1999



During the reporting period, indirect offsets were valued at $9 billion, and accounted for 56 percent of all transactions. U.S. companies reported receiving $10.8 billion in indirect offset credits, which translates into 120 percent of reported actual values for indirect offset transactions. As a share of total offsets, indirect offset transactions ranged from 37 to 65 percent over the reporting period. The lowest percentage of indirect offsets (37 percent) occurred in 1998, in juxtaposition to the high direct offset percentage that year. In all other years, indirect offsets accounted for 57 percent or more of all offset transactions.

Unspecified offset transactions (i.e., when companies failed to identify a transaction as either a direct or indirect offset) accounted for only 3.4 percent of total offset transactions during the reporting period. Unspecified offset transactions were valued at $536 million, of which nearly half involved Israel ($243 million). Another $197 million of the unspecified offset transactions involved Australia, the Netherlands, and South Korea. The credit value of unspecified offset transactions was $674 million, or 126 percent of the actual value.

Concentrated Nature of Offset Activity

Based on the reported data, it appears that offset activity is highly concentrated both in terms of U.S. companies and foreign purchasing countries involved. With respect to U.S. companies, a few high-technology U.S. defense companies dominate the market, and the number of large U.S. defense contractors has fallen with the extraordinary consolidation of the U.S. defense industry in recent years. These U.S. firms and their suppliers offer foreign government purchasers much in the way of know-how, potential technology transfer, and business opportunities for foreign industries. The defense systems offered by these U.S. companies are widely considered to be the best available and, as a result, are very expensive. Indeed, just five U.S. companies accounted for over 82 percent of the value of export contracts reported during the 1993-1999 reporting period. All of these export contracts included offset agreements.

Offset activity also is concentrated in terms of the foreign purchaser countries involved, although not to the same extent as the concentration of offset activity in the U.S. defense industry.

Approximately 55 percent of all new offset agreements, by value, were signed with just five countries;

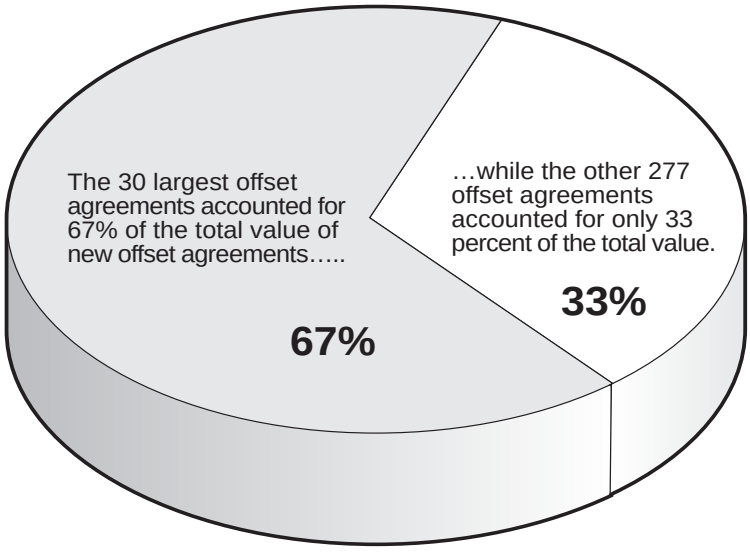
- Finland;
- the United Kingdom;
- Israel;
- Switzerland;
- the Netherlands.

Seventy-eight percent of all new offset agreements were signed with just ten countries. Not surprisingly, each of the ten countries purchased major aerospace defense systems.

Offset agreements, as might be expected, were also dominated by very large contracts. For example, the largest 10 percent of new offset agreements (i.e., the top thirty) represented 67 percent of the total value of all new agreements entered into during the period, while the top 10 percent of export contracts were 72.5 percent of total export contracts. In addition, just 19 of 198 defense systems, again 10 percent, referred to in the export contracts accounted for two-thirds of the export contract values, and 64 percent of the new offset agreements values.

Chart 2-4 compares the value of the largest thirty offset agreements to the remaining 277 offset agreements. The largest thirty offset agreements totaled $14.9 billion, which accounted for approximately two-thirds of the value of all offset agreements during the reporting period. The other 277 offset agreements reported totaled $7.4 billion, or less than half the value of the largest 30 offset agreements. Offsets as a percentage of the value of the export contracts were higher, on average, for the largest thirty agreements, 57 percent versus 52 percent for the remaining 277 agreements. The data seem to show that the largest export contracts often result in the largest offset percentages.

Chart 2-4 Concentration of Large New Offset Agreements, 1993 and 1999



307 New Agreements between 1993 and 1999
Total Value = $22.3 billion
(**Source:** U.S. Department of Commerce/BIS Offset Database).

Offset transactions also are concentrated among a few U.S. companies. The top five companies in terms of export contracts (and their suppliers) accounted for 83 percent of the total transaction value, and the top nine for almost 93 percent. In terms of countries, the top five countries ranked by offset activity accounted for 58 percent of the actual transaction value and 52 percent of the credit value. The top ten countries accounted for 79 percent of the actual and 73 percent of the credit values.

Impact of Offsets on the U.S. Defense Industrial Base

Defense Preparedness

Granting offsets to foreign buyers of U.S. defense systems has both positive and negative effects on U.S. defense preparedness. By exporting U.S. defense systems, U.S. prime contractors have been able, in many instances, to maintain production lines for systems that would otherwise close due to a lack of sufficient demand from the U.S. military. Maintaining these production lines enhances U.S. defense preparedness because the manufacturing resources and work force remain available should they be needed in a national emergency. This positive effect filters down the supply chain to subcontractors as well, enabling them to maintain their capabilities.

Another positive effect of using offsets to increase defense exports is that greater U.S. defense exports to our allies encourage interoperability between the armed forces. Recent U.S. military actions have shown the value of shared capabilities and logistics between the United States and its coalition partners. In an era of tightened defense budgets worldwide, interoperability allows the United States and its partners to leverage defense spending and increase the effectiveness of joint missions.

However, offsets also have negative effects on U.S. defense preparedness. Offsets that are required by foreign buyers of U.S. defense exports may displace U.S. manufactured goods with foreign products. For example, U.S. prime contractors have utilized foreign manufacturers of engine parts in order to comply with offset agreements. This can create new and enhanced foreign competitors for U.S. subcontractors and increase the proliferation of weapons and technology to nations hostile to the United States. Over time, this might cause U.S. subcontractors to exit the business, and make the defense sector look less attractive to potential new U.S. suppliers. In a national emergency, the potential lack of subcontractor capabilities could limit U.S. defense actions.

Employment

Offsets also can affect employment levels in the defense sector. The data reported show that the export sales facilitated by offsets maintained 38,400 work-years annually, while the offset transactions displaced about 9,500 work-years annually. Similarly, the Presidential Commission on Offsets in International Trade, using a smaller sample of offset agreements and offset transactions generated by U.S. defense exports and a different methodology, found that offset transactions displaced 4,200 work-years annually.

Bureau of Industry and Security Analysis

Offset reports received by Bureau of Industry and Security (BIS) show an accumulated total of $40.2 billion in defense export contracts from 1993 to 1999, which averages to about $5.7 billion per year. (Note: these are only export sales that have an offset agreement attached and that are reported.) Aerospace defense systems accounted for nearly 90 percent of the reported value of export contracts from 1993 to 1999, so it is reasonable to use data based on the aerospace industry in this analysis. According to the *Annual Survey of Manufactures*,[9] the value added per employee in the aerospace product and parts manufacturing industry was $149,688 in 1999. Dividing this figure into the $40.2 billion defense export sales total results in a total of 268,558

9 U.S. Census Bureau, February 2002.

work-years that were maintained by defense exports associated with offset agreements over the seven-year period from 1993 to 1999, or approximately 38,400 work-years annually.

To take the calculations one step further, from a starting point of $22.3 billion in offset agreements during the 1993-1999 time period, $15.9 billion were executed in transaction data that was reported over the same time period. Of the $15.9 billion, $10 billion of the total offset transactions was comprised of subcontracting ($4.5 billion) and purchasing ($5.5 billion), both of which likely displace sales from U.S. firms. Averaged over seven years this yields $1.43 billion in displaced sales per year. Dividing $1.43 billion by $149,688 (the value added by each worker in the aerospace industry in 1999) results in the yearly loss of about 9,500 work-years.

The Presidential Offsets Commission's Findings

The Presidential Commission on Offsets in International Trade also has examined the impact of offsets.[10] The Commission's findings on the impact of offsets are as follows:

The Commission staff study found that defense offsets supplant a significant amount of work/jobs that would go to U.S. firms if export sales occurred without offsets. To assess some of the economic effects of offsets, the Commission staff conducted a study of a representative sample of 50 defense offset transactions completed by major U.S. exporters over 1993-1998, representing 12 percent of the value of all defense offset transactions during this time period. The study found that direct offset transactions[11] during these six years resulted in the loss of $2.3 billion in work ($0.4 billion per year), or 25,300 work-years (4,200 per year), that would have gone to U.S. firms and their workers if the export sales had been made without offsets. Two-thirds of the lost work was borne by suppliers to the U.S. exporters.[12] Of the total estimated lost jobs, those in the aerospace industry amount to about 0.5 percent of total employment in the U.S. aerospace industry and 1.2 percent of employment in the U.S. defense aerospace industry, not an insignificant amount for one of the United States' largest industries.

However, industry estimates and other evidence suggest that offsets do facilitate exports. Under some potential remedies for offsets, such as a unilateral decision by U.S. firms not to enter into offset agreements, the jobs lost from reduced defense export sales estimated by the staff study at 85,800 work-years annually for this potential remedy would likely exceed the jobs gained from the reduction in defense offsets.[13] These estimates underscore the need for the Commission to develop creative policies to reduce jobs lost through offsets in ways that do not inadvertently cause additional job losses. Possible approaches are discussed in the final section of the report.

In summary, BIS and the Commission agree that offsets have both a positive and negative effect on the U.S. defense industrial base, the U.S. economy, and, by extension, U.S. national security. Offsets can strengthen U.S. national security by:

- Increasing the capabilities of defense firms in allied nations, thereby strengthening our joint defense preparedness and interoperability; and
- Facilitating increased U.S. exports of defense articles, thereby helping to maintain the economic viability of U.S. defense firms and the defense articles they develop.

However, offsets can harm national security by:

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10 To read the full *Status Report of the Presidential Commission on Offsets in International Trade* – January 18, 2001, see the Commission's website at www.offsets.brtrc.net.

11 The estimated job loss also does not include losses resulting from commercial offsets.

12 This result is based on information obtained from the U.S. exporters. The Commission staff did not survey U.S. suppliers themselves.

13 Commission members Markusen and Buffenbarger note that this number is speculative and based on estimates provided by the aerospace companies surveyed. A full discussion of this issue is contained in Section VI(C) of the Commission's report.

- Increasing the capabilities of foreign defense firms, which in turn may increase the proliferation of weapons and technology to nations hostile to the United States; and

- Depriving capable U.S. defense firms and their workers of business in favor of foreign firms, thereby eroding the U.S. supplier base, allowing the skills of essential U.S. defense workers to atrophy, and increasing U.S. dependence on foreign suppliers. Further analysis of this issue is warranted.

Offset Activity in 1999

Offset Agreements, 1999

In 1999, nine U.S. defense contractors reported entering into thirty-two offset agreements with ten different foreign countries. The offset agreements were valued at $1.45 billion, accounting for 72 percent of the total reported U.S. defense export contract values ($2.01 billion). In relation to the previous six years, both the value of total reported defense exports related to offset agreements and the offset agreement total were at their lowest levels in 1999. It is not unusual to see changes in the yearly offsets totals, as the number and value of defense contracts can vary substantially from year to year. In 1999, there were relatively few deals, and the average value for the deals was low. Another reason for the low levels was that Europe – which typically demands the highest level of offsets– had fewer agreements in 1999 than in previous years.

U.S. companies signed the most offset agreements with South Korea and Greece (five each), followed by Turkey and Israel (four each). The total value for defense items purchased in 1999 by each country is shown in Table 4-1

Taiwan led all countries in offset value, with three new offset agreements totaling $347.4 million. Israel was a close second with $340.8 million, and Greece followed with $290.5 million. In export contracts, Israel led the way with purchases of defense items from U.S. defense contractors totaling $564.2 million. Taiwan and Greece ranked second and third, respectively, with purchases of $364.2 million and $294.6 million, respectively. In terms of percentage of sales value accounted for by offsets, the Netherlands, Denmark, Spain, and Sweden each had 100 percent, while Australia was the lowest with 12 percent. The average offset value required of the defense contractor was 72.2 percent of the value of the exported defense articles. U.S. firms reported that the average term to complete offset agreements entered into in 1999 was 75 months, a decrease from 1998's figure of 83 months and 10 months below the average of 85 months for the period 1993-1999.

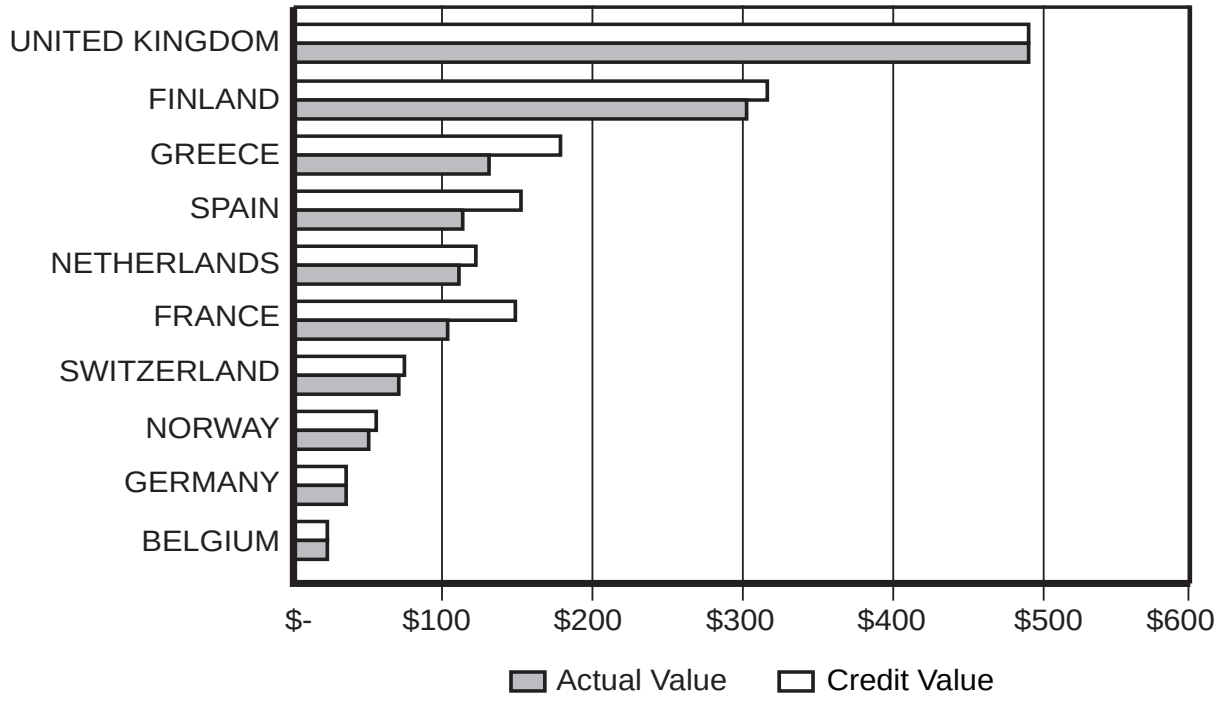
Offset Transactions, 1999

In 1999, 11 U.S. companies reported offset transactions with a total actual value of $1.81 billion. This figure was down 21 percent from the 1998 total of $2.28 billion, and was lower than the transaction value for any of the previous six years. With the decrease in defense sales and offset agreements, a similar drop in offset transactions would be expected in the future. The credit value[14] received for these transactions was $2.24 billion, or 124 percent of the actual value. There were 437 offset transactions reported in 1999, the lowest number reported for any single year from 1993 to 1998. As in previous years, the value of the offset transactions reported was concentrated largely among a few firms. The top three U.S. prime contractors accounted for 85 percent of the total transaction values reported.

Chart 4-1 shows the top 10 foreign countries that received offset transactions in 1999, in order of actual value of the transactions. The United Kingdom was the recipient of the largest amount

14 The credit value is a value that some foreign governments provide as an incentive for certain kinds of offset transactions. This value varies greatly by country and by the kind of transaction (i.e., purchase, technology transfer, investment, etc.), but is normally more than the actual value. The percentage difference between the actual value and the credit value is the multiplier. For the entire database, the multiplier is 118.6 percent, which means the credit value is 18.6 percent more than the actual value. Generally, multipliers are provided only by developing countries.

of offset transactions (almost $500 million in 1999). Finland was second with $300 million of offset transactions. Together, the United Kingdom and Finland accounted for 45 percent of the 1999 total value of offset transactions. Greece, Spain, the Netherlands, and France each received more than $100 million in offset transactions in 1999. All remaining countries received less than $100 million in offset transactions during 1999.



1999 Offset Transactions by Region

European countries overwhelmingly dominated all recipients of offset transactions in 1999, with $1.5 billion of the $1.81 billion total, or 81 percent of the actual value of all offset transactions for the year. The credit value for these offset transactions of $1.7 billion, however, was a smaller percentage (74 percent) of the total credit value of all offset transactions. The observed practice for European countries over the past seven years has been to provide less credit for offset transactions than other regions, with the exception of Canada (the dominant offset player in North and South America). In 1999, European credits accounted for 114 percent of the actual offset transaction values.

Asia was a distant second to Europe in value of offset transactions. Asian offset transactions amounted to $191 million in 1999, accounting for only 11 percent of the total. However, U.S. companies received more than $347 million in offset credits in the Asian markets in 1999, or 182 percent of the actual offset transaction values. The higher rate of credits is typical for Asian countries such as Taiwan and South Korea. The difference between European and Asian credit percentages is explained by the regions' transaction preferences. A greater percentage of European offsets are based on actual purchase transactions, while Asia has a higher share of technology transfer and training transactions. The Middle East was next with $132 million in offset transactions. Offset credits of $192 million were 152 percent of actual transaction values. Offset transactions in North and South America amounted to only $25 million. No additional credit was granted by the purchasing nations.

Table 4-1 1999 Export and Offset Agreement Values by Country

Country	Number of New Offset Agreements	Export Value (in $ millions)	Offset Value (in $ millions)	Average Percent Offset
Taiwan	3	$ 364.2	$ 347.4	95%
Israel	4	$ 564.3	$ 340.8	60%
Greece	5	$ 294.6	$ 290.5	99%
Turkey	4	$ 158.8	$ 145.3	91%
South Korea	5	$ 230.8	$ 132.5	57%
Netherlands	3	$ 36.1	$ 36.0	100%
Australia	3	$ 229.8	$ 27.5	12%
Denmark, Spain, Sweden	5	$ 132.1	$ 132.6	100%
Total	**32**	**$2,010.7**	**$1,452.6**	**76.15%**

Source: U.S. Department of Commerce/BIS Offsets Database

1999 Offset Transactions by Type and Category

In 1999, defense contractors reported total direct offset transactions valued at $588 million, for which they received offset credits of $705 million. Indirect offset transactions were valued at $1.2 billion for which they received offset credits of $1.4 billion. The remaining value ($22 million) were unspecified and received offset credits of $103 million.

Offsets generally are categorized into nine types of transactions. Table 4-2 shows the total values for each of the nine categories for offset transactions in 1999 reported to the Department of Commerce. Three categories accounted for more than 80 percent of the total value of all offset transactions in 1999.

- Purchase ($768 million);
- Subcontract ($405 million);
- Technology Transfer ($296 million).

Purchases alone accounted for 42 percent of the total 1999 offset transaction value. Also shown on Table 4-2 are credit values and the multipliers (i.e., credit value divided by actual value) for each category of offsets. The multipliers varied greatly by category, ranging from 100 percent for credit transfers and co-production to nearly 6,000 percent (i.e., a 60 fold multiplier) for training. (Note: The 1999 Training multiplier appears to be an anomaly arising from a very small actual value. Since 1993, the Training multiplier has averaged approximately 160.9 percent. The average multiplier for all categories of offset transactions in 1999 was 124 percent.)

The 1999 data shows a significant change in allocation of offset transactions by category from the previous year. In 1999, purchases accounted for 42 percent of the total offset transactions (by value), an increase of 13 percent from 1998. In 1999, defense companies reported 121 offset transactions requiring subcontracts, which accounted for 28 percent of the value of all offset transactions that year. In 1998, by comparison, subcontracts accounted for 53 percent of the value

of all offset transactions. The change in allocation of offset transactions by category from one year to the next can be explained by individual countries' preferences for different categories of offset transactions. (See Appendix E for detailed information on offset requirements for many foreign countries.)

Table 4-2: Offset Transactions by Category, 1999

Offset Category	Actual Value ($ millions)	Credit Value ($ millions)	Percent Credit
Purchases	$768.2	$782.1	102%
Subcontracts	$404.7	$434.3	107%
Technology Transfer	$295.9	$361.8	122%
Other	$249.3	$358.9	144%
Co-production	$40.5	$40.5	100%
Investment	$26.1	$191.7	736%
Credit Transfer	$20.0	$20.0	100%
Licensed Production	$3.7	$26.2	716%
Training	$0.5	$27.5	5978%
Total	**$1,808.8**	**$2,243.0**	**124%**

Source: U.S. Department of Commerce/BIS Offsets Database

Conclusions

Since the Department of Commerce's first offset report in 1996, there have been many changes in the world defense market. Governments worldwide have decreased defense spending, which, in turn, has increased the international competition among those firms remaining in the defense sector. Because of intense competition for a shrinking number of export sales, offsets have become more important in determining the outcome of weapon sales competitions. Europe, the largest market for U.S. defense exports, leads the world in the level of offsets required, with average offset levels approaching, and sometimes exceeding, 100 percent of the value of the export contract. From the U.S. perspective, Europe is clearly the central focus of this trend, dominating both offset agreements and offset transactions with U.S. companies. Because 90 percent of offset agreements are aerospace-related, concerns about effects of offsets on U.S. prime contractors and the U.S. aerospace infrastructure have increased. Most recently, the press and prime contractors have reported examples of European governments offering extra incentives and guarantees on top of their firms' offset packages, something that the U.S. government has not done and will not do, under the current offset policy. This raises the issue of defense offsets to an entirely new and anti-competitive level.

Offsets in defense trade have a mixed impact on employment in the United States. Based on the data received, BIS calculates that export sales facilitated by offsets maintained 38,400 work-years annually for the period 1993 through 1999, while the offset transactions displaced approximately 9,500 work-years annually.

In the coming year, using authorities granted under the *Defense Production Act of 1950*, as amended, the Department of Commerce is committed to working with U.S. industry, the Department of Defense, and foreign governments to analyze the impact of offsets on all parties and to seek ways to mitigate their effect on competition. Our goal is to support the U.S. defense industry and to ensure a robust and vibrant industrial base.